PREVENT YEAR 2000 EMERGENCIES

NDEP — Nevada Division of Environmental Protection

SBAP — Small Business Assistance Program

Prevent accidents or emergencies that could affect public health, the environment, and your business.

The Year 2000 (Y2K) Problem

The Y2K dilemma is the result of a standard practice used in software programming. To save memory space and keep costs down, computer programs and microchips were designed to recognize the last two digits of a year. This means the year 2000 will be noted as 00 and computers and microchips may not be able to distinguish whether this means 1900 or 2000. This could cause computers and systems that use computer chips to shut down. Here are some examples of what could happen:

♦ A safety system, designed to detect emissions of deadly hydrogen sulfide gas, shut down during a Y2K test on an oil rig in the North Sea.

♦ A utility company in Hawaii ran tests on its system to see if it would be affected by the Y2K bug. The entire system shut down.

♦ A large grocery chain in Britain, which had automated distribution centers, had several shipments of canned tomatoes sent to the dump when the automated system that they had expired in 1900. It was the tomato company sale's rep who brought the issue up when he noticed they were selling a lot of canned tomatoes.

♦ At a smelter in New Zealand, the process controls stopped working at midnight on Dec. 31, 1996, when the computer software failed to account for 1996 being a leap year. The software failed to account for the 366th day of the year. The equipment repair bill exceeded $1 million. Year 2000 is a leap year.

At any size company, the Y2K issue could threaten worker and community safety and health. It could cause complete shutdowns of machinery or safety-related systems or could generate erroneous information (e.g., wrong temperature data) which could lead an operator to take unsafe or improper measures.

In addition to administrative and management systems (payroll, financial records, inventory, etc.), the Y2K problem could affect: your computer software, your control/process equipment, and critical services provided to you by others such as utilities, transport and suppliers.

Your Control or Process Equipment

Even if your operations do not directly use computers, some of your control machinery (e.g. valves, pumps), and emergency protection equipment (fire and

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Examples of Equipment to Check:
- *Controllers*
- *Alarms*
- *Lighting*
- *Air monitoring/leak detection devices*
- *Hazard communications databases*
- *Storage tank monitors*
- *Security systems*
- *Generators*
- *Lab instruments*
- *Environmental control systems*
- *Controllers for refrigeration, valves, pumps, sensors, and analyzers*
- *Programmable control systems*
- *Safety shutdown systems*
- *Fire detection systems*
- *Explosion suppression systems*
- *Elevators*
- *Conveyors*

SBAP

Staff assistance: Call (775) 687-4670, ex. 3162 or visit our website @ http://www.state.nv.us/ndep/sba/sba01.htm

(con't) gas detectors) may be embedded with computer chips that are date-sensitive. If these microchips misunderstand the date change, the equipment could fail or malfunction, causing process upsets that lead to accidents. For example, an automatic valve with an embedded chip could fail in such a way that the valve turns off the feedstock supply or opens the valve completely. Security systems and alarms which automatically switch on and off or call police are at risk, as are elevators, air and heating systems, cellular phones, gasoline pumps, timed lighting,etc. Because Y2K problems can affect

*H*azard *A*wareness and *R*eduction

The Y2K concern is real and the solution may not be easy. The effort now to identify and fix the problem, however, will reduce the risk of more costly impacts of business disruptions, safety failures and chemical releases.

Steps to Address the Problem

There are several steps you can take to identify and address the Y2K problem. Throughout this process, you should be sure to document what you have done.

1. Identify and check systems for Y2K compliance. Make a list of the date-dependent components of your systems that are likely to be affected by the "millennium bug". Focus on software and equipment with embedded microchips. Ask yourself is the equipment of systems use or depend on date information, for example: does the system order/retrieve information by date or perform date-based calculations? Prioritize your list based on the potential for causing health, safety or environmental concerns and how critical they are to business production. Starting with the most critical equipment, check with your supplier, installer or manufacturer to determine if the system component is Y2K compliant.

2. Correct the problem. If critical equipment can be affected by the Y2K problem, you have several options, including repairing, modifying, or replacing the equipment. Where systems cannot be assessed or corrected, you could consider operating the system manually. Staff may need training to do this or additional staff may be needed when automated processes are switched to manual.

3. Test systems. Systems and equipment should be tested to make sure the Y2K malfunction is corrected. Remember to test for other critical dates also (see "Dates to Watch" box). Before you test, alert local emergency and environmental agencies and make sure your employees are prepared for any possible failures , especially those that would have an adverse affect on health and safety or the environment.

4. Develop and implement a contingency plan. Contingency plans are essential to your Y2K strategy. Even if you believe your system is compliant, you should develop a Y2K contingency plan to prepare for unanticipated problems. Your contingency plan should not depend upon backup equipment and systems that could also fail (e.g. backup generator, automatic shutdown system). Facilities should not overlook the possibility that telecommunications and radio may be disrupted thus preventing police, fire and other emergency personnel from responding promptly. Work with local SERC, LERC and other emergency management to review emergency response procedures and resources.

Web Information Resources

Below are some resources that will help you to get started to address the Y2K problem at your facility.

- http://www.y2k.gov/java/product_ compliance.html
- http://clu-in.com/y2k.htm
- http://www.osha.gov/Y2knews.pdf
- http://www.sba.gov/y2k/
- http://ww.gao.gov/special.pubs/ bcguide.pdf